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भारतीय मानक

अपघर्षी कण — नमूने लेना और विघटित करना

Indian Standard

ABRASIVE GRAINS — SAMPLING AND SPLITTING

ICS 25.100.70

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

March 2003 **Price Group 1**

Abrasives Sectional Committee, BP 09

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 9138 : 1993 'Abrasive grains — Sampling and splitting' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Abrasives Sectional Committee and approval of the Basic and Production Engineering Division Council.

The text of the International Standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker in the International Standard while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 6344-1 : 1998 Coated abrasives — Grain size analysis — Part 1 : Definitions, designation and principle	IS 15287 (Part 1) : 2003 Coated abrasives — Grain size analysis: Part 1 Grain size distribution test	Identical
ISO 8486-1 : 1996 Bonded abrasives — Determination and designation of grain size distribution — Part 1 : Macrogrits F4 to F220	IS 15288 (Part 1) : 2003 Bonded abrasives — Determination and designation of grain size distribution: Part 1 Macrogrits F4 to F220	do

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
ABRASIVE GRAINS — SAMPLING AND SPLITTING

1 Scope

This International Standard specifies a method for the sampling and splitting of a lot of abrasive grains.

This method may be used in the comparative testing of uniformly produced abrasive grains.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9138. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9138 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6344-1:—[1], *Coated abrasives — Grain size analysis — Part 1: Definitions, designation and principle.*

ISO 8486:1986, *Bonded abrasives — Grain size analysis — Designation and determination of grain size distribution of macrogrits F4 to F220.*

3 Apparatus

3.1 Sampling thief

The sampling thief is made from seamless steel tubing of inside diameter approximately 25 mm and length approximately 800 mm. The tube is pointed at one end and has a "T" handle at the other end. Holes are bored in a straight line, lengthwise along the tube, and spaced at 50 mm intervals. The diameter of the holes is determined by the size of particles to be sampled and should be approximately three times the size of the largest particle. However, it is usually sufficient to use holes 10 mm in diameter for grains designated F20, P20 and finer (see ISO 8486 and ISO 6344-1), while holes approximately 25 mm in diameter are recommended for grains No. 16 and coarser.

An alternative type of sampling thief may be used for grains No. 4 and finer. This sampling thief is again made from seamless steel tubing of inside diameter approximately 25 mm and length approximately 800 mm, but is provided with a lengthwise slot of approximately 25 mm in width. This type of sampling thief is also pointed at one end and provided with a "T" handle at the other end.

3.2 Splitter

A riffle-type sampler (commonly known as a Jones sampler) is generally used. It consists of a hopper made up of a series of chutes that are constructed to discharge alternately in opposite directions.

Other types and sizes of samplers may be used.

4 Procedure

4.1 Segregation

If transportation etc. has caused segregation, the lot shall be re-mixed before sampling is carried out.

4.2 Sampling

Press the sampling thief (3.1) at an angle of 45° to the horizontal, with the holes or slot facing downwards, into the container, rotate the sampling thief about its longitudinal axis by 180° and allow the tube to fill. Withdraw the tube, taking care not to rotate it, and remove the sample.

This procedure may be repeated as many times as necessary to obtain the required amount of sample.

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[1] To be published.

4.3 Sample splitting

Pass the sample obtained in 4.2 through the splitter (3.2), dividing it into two equal portions. Take one of these portions and, by passing it through the splitter, divide it into two portions again. Repeat this procedure until the sample is 25 % larger than the amount required for testing.

Alternatively the sample may be split manually by coning and quartering. Repeat this process until the sample is 25 % larger than the amount required for testing.

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Amendments Issued Since Publication

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